

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
25 August 2005 (25.08.2005)

PCT

(10) International Publication Number
WO 2005/079036 A1

(51) International Patent Classification⁷: **H04L 29/06**, 12/56

(21) International Application Number:
PCT/EP2004/009057

(22) International Filing Date: 12 August 2004 (12.08.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
04003647.7 18 February 2004 (18.02.2004) EP

(71) Applicant (for all designated States except US): **SONY INTERNATIONAL (EUROPE) GMBH** [DE/DE]; Kempferplatz 1, 10785 Berlin (DE).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **HOHL, Fritz** [DE/DE]; Reinsburgstr. 205, 70197 Stuttgart (DE). **KOVACS, Ernő** [DE/DE]; Kleinhohenheimer Str. 20, 70619 Stuttgart (DE).

(74) Agent: **RUPP, Christian**; Mitscherlich & Partner, Sonnenstrasse 33, Postfach 33 06 09, 80066 München (DE).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

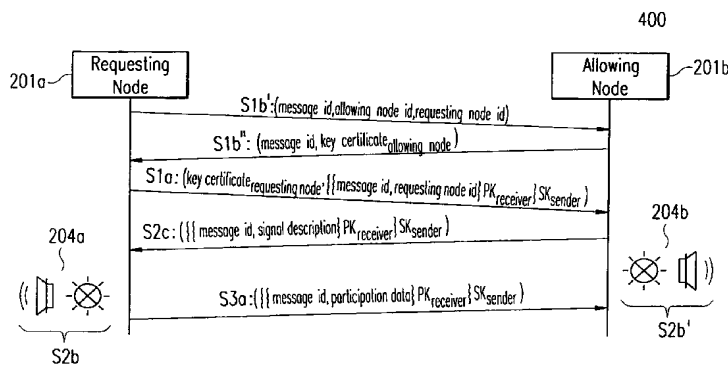
(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: DEVICE REGISTRATION IN A WIRELESS MULTI-HOP AD-HOC NETWORK



(57) **Abstract:** In a wireless multi-hop ad-hoc network a wireless communication device (201a) shall be enabled to register with a multi-hop network in a secure and easy-to-use way. One embodiment refers to a method for registering a user's wireless communication device (201a) before allowing said device (201a) to enter a wireless multi-hop ad-hoc network and participate in communication with wireless nodes (201b+c) connected to the network. For this purpose, said device (201a) wirelessly transmits (S1a) a registration request message to all these wireless nodes (201b+c) and determines (S1b) the nearest wireless node (201b) in its environment being authorized to register (S3a) said device (201a) to the network by evaluating wirelessly received response messages from said nodes (201b+c). In order to prevent man-in-the-middle-attacks, said device 201a starts a protocol that ensures that not other registration is executed at all devices in the neighborhood of said device 201a before continuing. The device (201a) then identifies (S2) itself towards the user by decrypting (S2a) and audio-visually signaling (S2b) information wirelessly received (S2c) from, audio-visually signaled (S2b') and encrypted (S2a') by the authorized wireless node 201b. The said node 201b also identifies itself towards the user by an audio-visual signal. If the user has verified that the two devices that signal are the two devices he/she intended to use, he/she sanctions the registration at the said device 201b. The authorized wireless node 201b then registers (S3a) said device 201a so said device 201a becomes a member of said wireless network.